WHAT IS CLAIMED IS:

1. A low dispersion optical fiber characterized by;

a difference between a maximum value and a minimum value of a dispersion value in a wavelength band having a bandwidth of 30 nm within a wavelength range of 1450 nm to 1650 nm of 2 ps/nm/km or less,

a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of $50\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

an effective cutoff wavelength of 1290 nm or more a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value, and a single mode operation in a wavelength band having a bandwidth of 30nm within a wavelength range of 1450nm to 1650nm.

2. A low dispersion optical fiber characterized by;

a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of $45\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value,

a positive dispersion slope of 0.035 ps/nm^2/km or less over a wavelength range of 1450nm to 1650nm,and

a single mode operation over a wavelength range of 1450nm to 1650nm

3. The optical fiber of claim 2,further characterized by the effective core area(Aeff) at a wavelength of 1550nm of $50\mu m^2$ or more and $70\mu m^2$ or less.

4. A low-dispersion optical fiber comprising:

a center core having a maximum refractive index n1, and a diameter a1;

a first side core, provided on the outer periphery of said center core,having a minimum refractive index n2, and a diameter a2;

a second side core ,provided on the outer periphery of said first side core,having a maximum refractive index n3, and a diameter a3; and

a cladding, provided on the outer periphery of said second side core,having a refractive index nc,

where n1>n3>nc>n2,wherein

a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of $45\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value,

a positive dispersion slope of 0.035 $ps/nm^2/km$ or less over a wavelength range of 1450nm to 1650nm,and

a single mode operation over a wavelength range of 1450nm to 1650nm

5. The low dispersion optical fiber of claim 4, wherein an intermediate layer having a lower refractive index than the cladding is provided between the cladding and the second side core.

5   6. An optical transmission system comprising a low-dispersion optical fiber, wherein

a difference between a maximum value and a minimum value of a dispersion value in a predetermined wavelength band having a bandwidth of 30 nm within a wavelength range of 1450 nm to 1650 nm of 2 ps/nm/km or less,

a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

10   an effective core area(Aeff) at a wavelength of 1550nm of $50\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

an effective cutoff wavelength of 1290 nm or more,

15   a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value, and

a single mode operation in a predetermined wavelength band having a bandwidth of 30nm within a wavelength range of 1450nm to 1650nm.

7. An optical transmission system comprising a low-dispersion optical fiber, wherein

20   a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of $45\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

25   a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value,

a positive dispersion slope of 0.035 ps/nm^2/km or less over a wavelength range of 1450nm to 1650nm,and

a single mode operation over a wavelength range of 1450nm to 1650nm.

5   8. An optical transmission system comprising a low-dispersion optical fiber, wherein

a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of 50μm^2 or more and 70μm^2 or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 10   20dB/m or less,

a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value,

a positive dispersion slope of 0.035 ps/nm^2/km or less over a wavelength range of 1450nm to 1650nm,and

a single mode operation over a wavelength range of 1450nm to 1650nm

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9. An optical transmission system comprising a low-dispersion optical fiber, wherein

a center core having a maximum refractive index n1, and a diameter a1;

a first side core, provided on the outer periphery of said center core, having a minimum refractive index n2, and a diameter a2;

20   a second side core ,provided on the outer periphery of said first side core, having a maximum refractive index n3, and a diameter a3; and

a cladding, provided on the outer periphery of said second side core, having a refractive index nc,

where n1>n3>nc>n2,wherein

25   a zero dispersion wavelength outside of a wavelength range of 1450 nm to 1650 nm,

an effective core area(Aeff) at a wavelength of 1550nm of $45\mu m^2$ or more and $70\mu m^2$ or less,

a bending loss at a wavelength of 1550nm when bent at a diameter of 20mm of 20dB/m or less,

5   a dispersion at a wavelength of 1550nm of 2 ps/nm/km or more in absolute value,

a positive dispersion slope of 0.035 $ps/nm^2/km$ or less over a wavelength range of 1450nm to 1650nm,and

a single mode operation over a wavelength range of 1450nm to 1650nm.

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